

# PATENT SPECIFICATION



768,001

Date of Application and filing Complete

Specification: Oct. 22, 1954.

No. 30460/54.

Application made In United States of America on Nov. 27, 1953.

Complete Specification Published: Feb. 13, 1957.

Index at acceptance:—Classes 140, A(2G:2K4:2N2:5F:13:22); and 142(4), G1(A:E:F:L:M:N).

International Classification:—A47g, D06k.

## COMPLETE SPECIFICATION

### Improvements in or relating to Carpeting

We, STERLING WILLIAM ALDERFER and EDWARD DAY ANDREWS, both Citizens of the United States of America, residing respectively at 240, North Portage Path, Akron 5 3, Ohio, United States of America, and 824, Delaware Avenue, Akron, Ohio, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it 10 is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a new and improved floor covering having many advantages over known types of carpeting.

15 One of the objects of the invention is to make a carpet-like floor covering which will dispense with the usual padding and lining used in the laying of the ordinary carpet. The improved carpeting will have a depth and 20 cushioning effect equal to or better than the highest quality carpeting. It has the advantage that it can be easily laid and by the use of the invention it is possible to obtain a multiplicity of designs and decorative patterns. 25 The carpeting is made in convenient sections, usually square, so that it can be laid in various patterns. Furthermore, in making the carpeting in sections it is possible to replace worn sections, or sections which have 30 been burned or stained, without disturbing other sections and without showing any signs of patching.

According to the invention there is provided a unit of floor covering material comprising a block of pile carpeting, a layer of 35 sponge rubber united to the underside of the carpet by a vulcanized bond, and a sheet of relatively stiff backing material of a non-metallic nature attached to the under surface 40 of the sponge rubber layer.

In the accompanying drawings, in which a representative of one form of the invention is shown:

Fig. 1 is a view showing a carpeting made 45 in accordance with the invention;

Fig. 2 is a section on the line 2-2 of Fig. 1;

Fig. 3 is an enlarged section of a single unit.

The material which is used for the purposes of the invention is preferably a carpeting with a relatively deep cut pile so that when the 50 sections of carpeting are closely abutted, the lines of separation do not show. This is particularly desirable where sections of the same color are placed in juxtaposition, which gives the appearance of a continuous carpet. 55

The carpeting material in the usual rolls or lengths is run through an apparatus which deposits on the underside thereof a latex foam such as described in Applicant's prior Specification of U.K. Patent No. 702,335. 60 The foam is preferably a natural rubber latex which has been compounded with a foaming agent and a gelling agent and a vulcanizing agent, together with stabilizers and anti-oxidants, such as would be well known to 65 those familiar with the art. The latex so prepared is thoroughly beaten so that a light froth or foam is obtained and this is spread over the underside of the carpeting. The latex at this time contains a very considerable 70 amount of water which penetrates into the backing of the carpet and firmly anchors itself to the carpet material.

The lengths of carpet are preferably 75 attached to one another so that it is economical to run the same in the machine. For the spreading of the latex and the subsequent gelling and vulcanizing thereof a machine similar to that shown in the Specification of U.K. Patent No. 702,335 may be employed. 80

After the foam is spread to the desired thickness, the carpet is led through a heated oven which sets the foam, and thence to a vulcanizing chamber where the gelled foam is vulcanized. Preferably, heated air is 85 blown around and through the latex foam and the carpet. The latex sponge contains a multitude of small cells which communicate throughout the mass so that during vulcanization heated air will pass through the 90

sponge and the carpet, thus curing the mass of foamed rubber and removing the objectionable odors which are characteristic of sponge rubber.

- 5 The density of the foam may be regulated by usual compounding procedures, but it is desirable to so compound the latex that the resultant sponge will have sufficient body and resilience so that it will yield to the tread so as  
10 to give the impression of a thick, rich carpeting.

After the foam has been cured on the lengths of carpet, a layer of stiff backing material is adhesively united with the under-  
15 side of the sponge rubber. A relatively light strawboard, fiberboard, or cardboard will be found especially useful for this purpose. The backing material should have sufficient rigidity so that it will cause the carpet sections  
20 to which it is attached to lie flat and not to curl up at the edges or corners either when it is laid or when in use. The backing will also prevent the sponge rubber from spreading out in use.

- 25 The backing material is attached to the underside of the sponge rubber layer by any well-known adhesive, which must be compatible with the rubber sponge and must hold the backing securely so that the edges of the  
30 carpet will not peel up from the backing. Any of the well-known rubber cements, either of the self-vulcanizing or non-vulcanizing types may be used.

The sponge rubber layer having been  
35 covered by the backing material, the carpeting is now cut into blocks or sections of convenient size and shape. Preferably the sections are square, although any rectangular shape is suitable for ease in laying. It is possible also  
40 to cut the carpeting into other shapes which will mate with complementary sections. The most convenient form is to cut the carpet in nine-inch squares, which will be found to fit in the majority of situations with little waste.

- 45 The floor is prepared in the same way that it would be prepared for linoleum, being given a coating of a liquid cement, and when the cement has the right tackiness the sections of carpeting are laid over the cemented area  
50 and are moved together so that the edges abut snugly. Where two sections of a velvet carpet of the same color are laid side-by-side with the edges of the backing material in contact, it is possible to detect the line of  
55 separation only on very close inspection.

When decorative effects are desired, sections of carpeting of different colors or shades may be employed, to obtain a variety of effects.

- 60 In Fig. 1 of the drawings, the centre of the carpeting 1 is laid in a checkerboard pattern with a border of one color. The invention makes it possible to obtain many beautiful designs and gives the home owner a great  
65 variety of patterns.

The individual squares are indicated at 5, each consisting of an upper layer of carpet 6 and the intermediate layer of vulcanized foamed latex sponge 8. The latex sponge adheres to the carpet because it has pene-  
70 trated through the base 9 and firmly bonded therewith by the vulcanization of the sponge rubber. While the latex foam will penetrate and embed itself in the woven base 9 of the carpet, it will not go into the pile fabric 10. 75

The reinforcing backing 12 is attached to the underside of the sponge by a layer of rubber cement 14 and the sections of carpet-  
ing are secured to the floor 15 by a layer of cement 16. 80

If a portion of the carpet becomes unduly worn, burned, or otherwise injured, it is easy to remove the section or sections so affected and replace them. This is a very substantial improvement in this art. As the foam is  
85 composed of a multitude of cells which are in communication with each other and as there is no barrier between the foam and the carpet, air can pass through the foam and through the carpet. This makes it possible to with-  
90 draw dirt which may collect in the foam and in the base of the carpet by the use of the ordinary vacuum cleaner.

It will be observed that while there is no limitation to the exact size of the blocks or  
95 sections, they should be made in convenient size for handling and laying. While cardboard or strawboard is preferred as the base material, any other sheet material may be used provided that it is rigid enough to hold  
100 the carpet from curling or turning up at the edges and readily takes the cement by which it is attached to the sponge rubber layer and to the floor. Where the term "block" is used in the specification and claims, it will be  
105 understood to cover a piece cut in a geometric pattern or in any fanciful or decorative shape.

What we claim is:—

1. A unit of floor covering material comprising a block of pile carpeting, a layer of  
110 sponge rubber united to the underside of the carpet by a vulcanized bond, and a sheet of relatively stiff backing material of a non-metallic nature attached to the under-surface of the sponge rubber layer. 115

2. A unit of floor covering material according to Claim 1, wherein the layer of sponge rubber is coextensive with the underside of the carpet, and the sheet of stiff backing material is coextensive with the block. 120

3. A unit of floor covering material according to Claim 1 or 2, comprising a block of pile carpet, with the sponge rubber penetrating the underside of the carpet.

4. A unit of floor covering material according to Claims 1-3, wherein the cells of the sponge rubber are in communication with each other and in communication with the interstices of the carpet.

5. A unit of floor covering material con- 130

structed and arranged substantially as herein described with reference to the accompanying drawings. wherein the blocks are laid in abutting edge-to-edge relation and attached to the floor.

6. A floor covering comprising a plurality of individual blocks of carpet, according to any of Claims 1-5.

7. A floor covering according to Claim 6,

STEVENS, LANGNER, PARRY  
& ROLLINSON,  
Chartered Patent Agents,  
Agents for the Applicants.

---

Printed for Her Majesty's Stationery Office by Wickes & Andrews, Ltd., E.C.4. 684/2.—1957.  
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2. from which copies  
may be obtained.

768001  
1 SHEET

COMPLETE SPECIFICATION  
This drawing is a reproduction of  
the Original on a reduced scale

